

REMARKS

The Office Action of July 22, 2010 has been carefully considered.

Claims 1, 6 and 9 have been rejected under 35 USC 103(a) over Dinkins in view of Lee et al, while claims 2-3, 5 and 7-9 have been rejected under 35 USC 103(a) over Dinkins in view of Lee et al and Mulford and claim 4 has been rejected under 35 USC 103(a) over Dinkins in view of Lee et al, Mulford and Proctor.

The invention is directed to a radio communication system including, in general three types of units, the "hand-portables" of the title, which are now recited as "user-operated" portable radio stations, having low power and limited range; on-board stations, which are now recited as "user-operated" on-board stations, which are generally mobile stations having higher power than the portables; and a network comprising base stations and a central station, which are generally fixed stations of high power.

Because the portables have low power, they are often out of range of the network stations, but within range of the vehicles in which the on-board stations are mounted. It is therefore known to place a repeater in the vehicle, which connects the hand-portables to the network through the on-board station. To comply with current standards, such a repeater must be a full duplex repeater, which is relatively expensive piece of equipment.

The invention obviates the need for an additional piece of equipment in a vehicle, by programming the on-board station to take the place of the repeater. Thus, when the portable is out of range of the network, the on-board station receives messages from the portable over a half duplex channel, and transmits the messages to the network over a different radio

channel.

Dinkins relates to a system with low power "subscriber units" which correspond to the hand-portables of the invention. In the system disclosed by Dinkins, however, the subscriber units transmit to a remote receiver, which is a receive only station that is connected to a repeater by wire, cable, radio or microwave.

The problem to be solved by Dinkins is the inability of the subscriber unit to receive signals from the repeater. In order to solve this problem, the repeater is connected to a higher powered store and forward repeater, which operates on the same frequency as the subscriber unit.

According to Dinkins, as shown in Fig. 2, the portable station 12 transmits signals to the network via the fixed station 16, apparently over a full duplex channel. The portable station 12 receives signals from the network via the repeater station 22, also over a full duplex channel. Both stations 16 and 22 are assumed to be fixed and dedicated hardware, and may be considered as extra parts of the network. Stations 16 and 22 are not user-operated stations. In particular, repeater 22 is not an on-board station and does not receive signals directly from the portable station, contrary to the invention.

Thus, Dinkins discloses that store and forward repeater units are known, but does not disclose or suggest programming an on-board radio to act as a store and forward repeater unit when a hand portable is out of range of a network. Indeed, Dinkins assumes that the subscriber unit can always transmit to the network through the remote receivers, but cannot always receive. The invention, to the contrary, assumes that the hand portables cannot always transmit to the network, and therefore must rely on an on-board repeater station to complete the transmission.

More specifically, Dinkins does not describe an on-board station which receives messages from the portable station over a half duplex channel when the portable station is out of range of the network, as recited by claim 1, or the step of transmitting a message from the portable station to an on-board station over a half duplex channel as recited in claims 6 and 9.

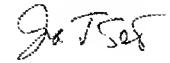
In Lee et al, Fig. 1B, the stations are office computer equipment rather than radio stations. They are linked by infrared and do not form part of a mobile radio network. The repeater stations 64, 66 are dedicated hardware, rather than user-operated stations. Similarly, in Figs. 2A and 2B, none of the repeaters are user-operated stations. A person skilled in the art of mobile radio would consider the Dinkins patent, but the Lee et al patent relates to a different area of technology, and there would not be any reason to combine the references. In any case, neither reference discloses or suggests an on-board user station and a portable user station which operate as defined in the claims.

Mulford has been cited to show an on-board station which receives and forwards voice messages, and Proctor has been cited to show multimode portable and on-board stations. Neither reference, however, discloses or suggests an on-board station which is programmed to operate as a store and forward receiver when a portable is out of range of a network.

Withdrawal of these rejections is requested.

In view of the foregoing amendments and remarks, Applicant submits that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,



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